

poster ABSTRACT

Poster No. 7

TITLE**DEVELOPING TOOLS FOR BIRTH DEFECTS TRACKING: THE AUTOMATED SPATIAL SURVEILLANCE PROJECT (ASSP)****TRACK****Network Content****OBJECTIVES**

Our objectives are to inform members of the birth defects surveillance community about the Automated Spatial Surveillance Project (ASSP) effort, including its capabilities and limitations. We hope to receive feedback about the potential usefulness of ASSP for birth defects tracking activities.

SUMMARY

We are developing a tool, preliminarily titled the Automated Spatial Surveillance Project (ASSP), to monitor spatio-temporal trends of birth defects within five central Atlanta counties. Our objective is to eventually make ASSP available to state birth defects surveillance systems. ASSP is written using the free software program “R,” a language and environment for statistical computing. ASSP inputs include databases of geocoded cases and controls and freely downloadable Census tract shapefiles. Year-specific maps are created for each birth defect group; these maps can be used to rapidly track trends in defects over time. Each map depicts birth defect prevalence, risk contours, and locations of possible clusters (if present). Risk contours, created by a two-dimensional kernel smoothing routine, connect areas of similar risk. Locations of potential birth defect clusters are identified from Monte Carlo simulations under a random labeling null hypothesis.

ASSP is envisioned as one of several steps in the exploratory data analysis phase of birth defects tracking and not for drawing inferences. ASSP maps are very sensitive to data quality issues. Cases with missing geocodes, large geocode location errors, cases assigned incorrect ICD codes, and over-ascertainment/under-ascertainment of cases strongly influences ASSP output. Multiple statistical comparisons become an important limitation when ASSP is employed to create maps of many different categories of birth defects across multiple years. Decisions about the existence of a birth defects cluster should not be based on ASSP maps; rather, these maps represent a starting point for a subsequent comprehensive cluster investigation.

AUTHOR(S):

Matthew J. Strickland, M.A., M.P.H.

National Center on Birth Defects and Developmental Disabilities (NCBDDD), CDC

Bennett R. Gardner, NCBDDD, CDC

